

## Unit 3 – Changing the Balance in Ecosystems (Ch. 5).

### *Chapter 5.1 – Natural Phenomena and Ecosystems*

1. What are some examples of natural phenomena?
2. Natural phenomena are often described by their impact on \_\_\_\_\_ since any damage they cause can be expressed in \_\_\_\_\_ terms.
3. In BC, one of the serious natural disasters that has been affecting our \_\_\_\_\_ involves the pine beetle. The adult pine beetle typically prefers trees over \_\_\_\_\_ years old, however the bark of these larger trees produced large amounts of \_\_\_\_\_ that can kill the adult beetles. The pine beetle is no longer kept in check because we are no longer experiencing sustained \_\_\_\_\_ winters.
4. Now that we are no longer experiencing sustained colder winters that keep the pine beetles in check, what effects are our forests in BC currently experiencing?
5. Provide a description of each of the following natural weather events, its cause, and the possible impacts on ecosystems.
  - a. Floods
  - b. Droughts

c. Fires

d. Tornadoes

e. Hurricanes

f. Blizzards

g. Infestations

6. Provide a description of the following natural weather events, its cause, and the possible impacts on ecosystems.

a. Volcanic eruptions

b. Earthquakes

c. Tsunamis

d. Landslides

e. Avalanches

### ***Chapter 5.2 - Pollutants in Ecosystems***

1. Substances that are introduced into the air, water, soil or food in concentrations that threaten the health or \_\_\_\_\_ of organisms are called \_\_\_\_\_.
2. \_\_\_\_\_ pollution is caused by gases that are added to the atmosphere. \_\_\_\_\_ pollution is caused by substances that end up in fresh and salt water. \_\_\_\_\_ pollution involves substances that contaminate the soil.
3. Volatile organic compounds are made of \_\_\_\_\_ and \_\_\_\_\_. Their source is the unburned fuels of \_\_\_\_\_. They can bring along air pollutants such as \_\_\_\_\_ and ground-level \_\_\_\_\_.
4. Another gas that comes from automobiles that is poisonous and \_\_\_\_\_ is \_\_\_\_\_ monoxide.
5. Name three sources of sulfur dioxide on Earth.
6. Nitrogen \_\_\_\_\_ and sulfur \_\_\_\_\_ react with \_\_\_\_\_ in the air and can form acid rain and ozone.
7. Organisms within ecosystems are adapted to survive with a certain \_\_\_\_\_ range.

8. Explain how the pH scale works.
9. \_\_\_\_\_ organisms are the most susceptible to changes in acidity of their environments.
10. List at least five types of water pollution.
11. As the number of organisms in an ecosystem \_\_\_\_\_, the demand for \_\_\_\_\_ also increases. Fish and plants may die from a lack of \_\_\_\_\_.
12. What are some sources of hazardous waste in land pollution?
13. Radioactive wastes are stored \_\_\_\_\_ and accumulate in \_\_\_\_\_.

### ***Chapter 5.3 - Bioaccumulation and Biomagnification***

1. If pollutants are not degraded they can build up and accumulate inside organisms. The term that describes this process is bioaccumulation .
2. \_\_\_\_\_ results in higher concentrations a certain pollutants in organisms that are at higher trophic levels.
3. Humans use \_\_\_\_\_ to control organisms that we consider pests. \_\_\_\_\_ are used to control insect pests, while \_\_\_\_\_ are used to control plant pests and \_\_\_\_\_ are used to control fungal pests.
4. What is DDT and what was it used for during and after World War II? Why is it now banned in Canada?
5. Not all pesticides bioaccumulate, for example \_\_\_\_\_ are directly toxic to birds and aquatic organisms.

6. Metals with high densities that are toxic in the environment are called \_\_\_\_\_.
7. \_\_\_\_\_ can cause damage to the respiratory, endocrine and circulatory system and is also a carcinogen.
8. Cigarette smoke is significant source of \_\_\_\_\_, a heavy metal that can damage the respiratory, \_\_\_\_\_, and \_\_\_\_\_ system.
9. Batteries, ammunition and computers are a significant source of \_\_\_\_\_, a heavy metal that can cause damage the \_\_\_\_\_, reproductive and \_\_\_\_\_ systems of animals.
10. Name some uses of mercury in our everyday lives. Why is this heavy-metal harmful to our environment?
11. What can endocrine-disrupting compounds do when present in an ecosystem?

### ***Chapter 5.4 - The Impacts of Human Industry on Ecosystems***

1. How can farming cause soil degradation?
2. Explain why logging only 1% of BC's forests can be a problem.
3. \_\_\_\_\_ occurs when trees are cut down without being replaced. This not only destroys trees, but also the \_\_\_\_\_ of many organisms.
4. Forests are carbon \_\_\_\_\_ and take in large amounts of \_\_\_\_\_ from the atmosphere.
5. Humans have damaged many aquatic ecosystems by \_\_\_\_\_ the wild aquatic species found there.

### ***Vocabulary to Know***

Write a concise definition of each of these terms found in this chapter.

**Acid precipitation -**

**Bioaccumulation -**

**Biodegradation -**

**DDT -**

**Deforestation -**

**Endocrine-disrupting compounds -**

**Heavy metals -**

**Pesticides -**

**pH scale -**

**Pollutant -**

**Sapwood -**

**Soil degradation -**